

R E M A R K S

Claims 1-2, 4-10, 15, and 17-19 are in the application, with Claims 1, 8, and 15 having been amended. Claims 1, 8, and 15 are the independent claims herein. No new matter has been added. Reconsideration and further examination are respectfully requested.

Claims 1, 2, and 4-9 are rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 6,489,676 (Taniguchi) in view of U.S. Patent No. 7,145,225 (Lee) and in further of U.S. Patent No. 5,641,113 ("Somaki") and Claims 15-19 are rejected under §103 over Taniguchi in view of Lee and further in view of Somaki and U.S. Publication No. 2002/0196650 (Chang). Reconsideration and withdrawal of the rejections are respectfully requested.

Claims 1, 8, and 15

Claim 1 concerns an apparatus including an integrated circuit die, an integrated circuit package coupled to the integrated circuit die, mold compound in contact with the integrated circuit die and the integrated circuit package, a first solder ball in contact with the integrated circuit package, a second integrated circuit package, and a second solder ball. The second solder ball is in contact with the second integrated circuit package, and in contact with the mold compound. A first portion of the first solder ball is in contact with the mold compound. A second portion of the first solder ball is not in contact with the mold compound. The mold compound defines an opening, where the second portion of the first solder ball is recessed beneath the opening. A third portion of the first solder ball is in contact with the integrated circuit package. The second solder ball is in contact with the first solder ball within the opening. Moreover, the first solder ball comprises a greater radius and a greater circumference than the second solder ball.

The art of record is not seen to disclose or suggest the features of Claim 1, particularly with respect to a first solder ball that comprises a greater radius and a greater circumference than a second solder ball.

For example, and referring to FIG. 1, an interconnect 18 may be in contact with a solder ball 28. The interconnect 18 may define a radius and a circumference and the solder ball may define a radius and a circumference. Thus, in some embodiments, the interconnect 18, as

illustrated in FIG. 1, comprises a greater radius and a greater circumference than the solder ball 28.

Taniguchi shows a semiconductor device including a copper post 18 and solder ball 6. Post 18 is formed in post hole 30 and the solder ball 6 is to couple the copper post in the post hole 30. Therefore, and as illustrated, the solder ball 6 has a same width as the copper post 18.

FIG. 3 of Lee shows structures 34 coupled to upper package 121U. Structures 34 are each shown to be a same size. Therefore, Lee fails to disclose or to suggest a first structure that has a greater radius and a greater circumference than a second structure. Somaki also illustrates solder balls where each solder ball is approximately the same size.

Therefore, the combination of Lee, Taniguchi, and Somaki taken in any permissible combination is not seen to disclose or to suggest a first solder ball that comprises a greater radius and a greater circumference than a second solder ball.

Claim 1 and its associated dependent claims are therefore believed to be allowable. Claims 8, and 15 include features similar to those described above with respect to Claim 1. In view of the foregoing, amended independent claims 8 and 15 and their related dependent claims are also believed to be allowable.

C O N C L U S I O N

The outstanding Office Action presents a number of characterizations regarding each of the applied references, some of which are not directly addressed herein because they are not related to the rejections of the independent claims. Applicant does not necessarily agree with the characterizations and reserve the right to further discuss those characterizations.

For at least the reasons given above, it is submitted that the entire application is in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience. Alternatively, if there remains any question regarding the present application or any of the cited references, or if the Examiner has any further suggestions for expediting allowance of the present application, the Examiner is cordially requested to contact the undersigned via telephone at (203) 972-4982.

Respectfully submitted,

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Date

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